

## SEQUENCE LISTING

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## (1) GENERAL INFORMATION:

## (i) APPLICANT:

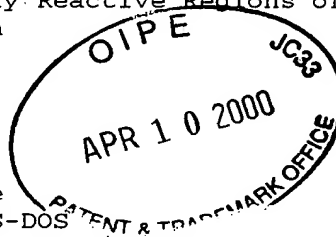
- (A) NAME: The Government of the United States of America as represented by the ...  
 (B) STREET: Mail Stop E-67, Executive Park, Bldg. 4, Suite 1103  
 (C) CITY: Atlanta  
 (D) STATE: Georgia  
 (E) COUNTRY: U.S.A.  
 (F) POSTAL CODE (ZIP): 30329

(ii) TITLE OF INVENTION: Antigenically Reactive Regions of the Hepatitis A Virus Polyprotein

(iii) NUMBER OF SEQUENCES: 88

## (iv) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk  
 (B) COMPUTER: IBM PC compatible  
 (C) OPERATING SYSTEM: PC-DOS/MS-DOS  
 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)



## (2) INFORMATION FOR SEQ ID NO: 1:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1206

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

Gly Leu Asp His Ile Leu Ser Leu Ala Asp Ile Glu Glu Glu Gln Met  
 1 5 10 15

Ile Gln Ser Val  
 20

## (2) INFORMATION FOR SEQ ID NO: 2:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1208

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

Asp	Arg	Thr	Ala	Val	Thr	Gly	Ala	Ser	Tyr	Phe	Thr	Ser	Val	Asp	Gln
1				5					10					15	
Ser Ser Val His															
20															

## (2) INFORMATION FOR SEQ ID NO: 3:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1210

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

Glu	Val	Gly	Ser	His	Gln	Val	Glu	Pro	Leu	Arg	Thr	Ser	Val	Asp	Lys
1				5					10					15	

Pro Gly Ser Lys  
20

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1211

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

Glu	Pro	Leu	Arg	Thr	Ser	Val	Asp	Lys	Pro	Gly	Ser	Lys	Lys	Thr	Gln
1				5				10						15	
Gly Glu Lys Phe															
20															

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1212

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

Asp Lys Pro Gly Ser Lys Lys Thr Gln Gly Glu Lys Phe Phe Leu Ile  
 1 5 10 15

His Ser Ala Asp  
 20

(2) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1215

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Leu Tyr Asn Glu Gln Phe Ala Val Gln Gly Leu Leu Arg Tyr His Thr  
 1 5 10 15

Tyr Ala Arg Phe  
 20

(2) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1216

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

His Thr Tyr Ala Arg Phe Gly Ile Glu Ile Gln Val Gln Ile Asn Pro  
1 5 10 15

Thr Pro Phe Gln  
20

(2) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1217

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

Ile Asn Pro Thr Pro Phe Gln Gln Gly Gly Leu Ile Cys Ala Met Val  
1 5 10 15

Pro Gly Asp Gln  
20

(2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

His Phe Lys Asp Pro Gln Tyr Pro Val Trp Glu Leu Thr Ile Arg Val  
1 5 10 15  
Trp Ser Glu Leu  
20

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
(B) LOCATION:1..20  
(D) OTHER INFORMATION:/label= YK-1224

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Asn Ile Gly Thr Gly Thr Ser Ala Tyr Thr Ser Leu Asn Val Leu Ala  
1 5 10 15  
Arg Phe Thr Asp  
20

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1235

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

Ser	Asp	Pro	Ser	Gln	Gly	Gly	Gly	Ile	Lys	Ile	Thr	His	Phe	Thr	Thr
1				5					10					15	
Trp	Thr	Ser	Ile												
			20												

## (2) INFORMATION FOR SEQ ID NO: 12:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide  
 (B) LOCATION: 1..20  
 (D) OTHER INFORMATION: /label= YK-1236

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

Gly	Gly	Ile	Lys	Ile	Thr	His	Phe	Thr	Thr	Trp	Thr	Ser	Ile	Pro	Thr
1				5					10					15	
Leu	Ala	Ala	Gln												
			20												

## (2) INFORMATION FOR SEQ ID NO: 13:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1241

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

Gln	Phe	Pro	Phe	Asn	Ala	Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val
1				5					10					15	
<hr/>															
Ile	Pro	Val	Asp												
			20												

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1242

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

Phe	Asn	Ala	Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val	Ile	Pro	Val
1				5					10					15	
<hr/>															
Asp	Pro	Tyr	Phe												
			20												

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear



(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1243

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

Ser	Asp	Ser	Val	Gly	Gln	Gln	Ile	Lys	Val	Ile	Pro	Val	Asp	Pro	Tyr
1				5				10					15		

Phe	Phe	Gln	Met
			20

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1244

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

Ile	Lys	Val	Ile	Pro	Val	Asp	Pro	Tyr	Phe	Phe	Gln	Met	Thr	Asn	Thr
1				5				10					15		

Asn	Pro	Asp	Gln
			20

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1247

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

Lys	Cys	Ile	Thr	Ala	Leu	Ala	Ser	Ile	Cys	Gln	Met	Phe	Cys	Phe	Trp
1				5				10					15		

Arg	Gly	Asp	Leu
			20

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1248

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

Phe	Trp	Arg	Gly	Asp	Leu	Val	Phe	Asp	Phe	Gln	Val	Phe	Pro	Thr	Lys
1				5				10					15		

Tyr	His	Ser	Gly
			20

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(iii) HYPOTHETICAL: NO

(v) FRAGMENT TYPE: internal

```
(ix) FEATURE:
      (A) NAME/KEY: Peptide
      (B) LOCATION:1..20
      (D) OTHER INFORMATION:/label= YK-1249
```

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1249

Phe Asp Phe Gln Val Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu  
1 5 10 15

Phe Asp Phe Gln Val Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu  
1 5 10 15

Phe Cys Phe Val  
20

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(iii) HYPOTHETICAL: NO

(v) FRAGMENT TYPE: internal

```
(ix) FEATURE:
      (A) NAME/KEY: Peptide
      (B) LOCATION:1..20
      (D) OTHER INFORMATION:/label= YK-1250
```

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1250

Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu Phe Cys Phe Val Pro  
1 5 10 15

Phe Pro Thr Lys Tyr His Ser Gly Arg Leu Leu Phe Cys Phe Val Pro  
1 5 10 15

Gly Asn Glu Leu  
20

## (2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1252
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:
 

Gly	Ile	Thr	Leu	Lys	Gln	Ala	Thr	Thr	Ala	Pro	Cys	Ala	Val	Met	Asp
1				5				10					15		
Ile Thr Gly Val															
20															

## (2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1261
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:
 

Val	Ala	Ser	His	Val	Arg	Val	Asn	Val	Tyr	Leu	Ser	Ala	Ile	Asn	Leu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1                      5                      10                      15  
 Glu Cys Phe Ala  
 20

## (2) INFORMATION FOR SEQ ID NO: 23:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1265

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

Thr Thr Val Ser Thr Glu Gln Asn Val Pro Asp Pro Gln Val Gly Ile  
 1                      5                      10                      15  
 Thr Thr Met Lys  
 20

## (2) INFORMATION FOR SEQ ID NO: 24:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1266

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

Gln Asn Val Pro Asp Pro Gln Val Gly Ile Thr Thr Met Lys Asp Leu  
 1 5 10 15  
 Lys Gly Lys Ala  
 20

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1268

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

Asn Arg Gly Lys Met Asp Val Ser Gly Val Gln Ala Pro Val Gly Ala  
 1 5 10 15  
 Ile Thr Thr Ile  
 20

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20

(D) OTHER INFORMATION: /label= YK-1271

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

```

Ile Thr Thr Ile Glu Asp Pro Val Leu Ala Lys Lys Val Pro Glu Thr
1           5           10           15
Phe Pro Glu Leu
                20

```

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1272

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

```

Glu Asp Pro Val Leu Ala Lys Lys Val Pro Glu Thr Phe Pro Glu Leu
1           5           10           15
Lys Pro Gly Glu
                20

```

(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1273

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

Ala Lys Lys Val Pro Glu Thr Phe Pro Glu Leu Lys Pro Gly Glu Ser  
 1                      5                      10                      15

Arg His Thr Ser  
                     20

## (2) INFORMATION FOR SEQ ID NO: 29:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1274

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

Phe Pro Glu Leu Lys Pro Gly Glu Ser Arg His Thr Ser Asp His Met  
 1                      5                      10                      15

Ser Ile Tyr Lys  
                     20

## (2) INFORMATION FOR SEQ ID NO: 30:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO



(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1276

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

Asp	His	Met	Ser	Ile	Tyr	Lys	Phe	Met	Gly	Arg	Ser	His	Phe	Leu	Cys
1				5					10					15	
<hr/>															
Thr	Phe	Thr	Phe												
				20											

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1279

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

His	Phe	Leu	Cys	Thr	Phe	Thr	Phe	Asn	Ser	Asn	Asn	Lys	Glu	Tyr	Thr
1				5					10					15	
<hr/>															
Phe	Pro	Ile	Thr												
				20											

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1290

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

Thr	Pro	Val	Gly	Leu	Ala	Val	Asp	Thr	Pro	Trp	Val	Glu	Lys	Glu	Ser
1				5				10						15	
Ala Leu Ser Ile															
20															

(2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1307

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

Leu	Ser	Phe	Ser	Cys	Tyr	Leu	Ser	Val	Thr	Glu	Gln	Ser	Glu	Phe	Tyr
1				5				10						15	
Phe Pro Arg Ala															
20															

(2) INFORMATION FOR SEQ ID NO: 34:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1308

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

Ser	Val	Thr	Glu	Gln	Ser	Glu	Phe	Tyr	Phe	Pro	Arg	Ala	Pro	Leu	Asn
1				5					10					15	
Ser Asn Ala Met															
20															

(2) INFORMATION FOR SEQ ID NO: 35:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1310

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

Pro	Leu	Asn	Ser	Asn	Ala	Met	Leu	Ser	Thr	Glu	Ser	Met	Met	Ser	Arg
1				5					10					15	
Ile Ala Ala Gly															
20															

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1312

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

Met	Ser	Arg	Ile	Ala	Ala	Gly	Asp	Leu	Glu	Ser	Ser	Val	Asp	Asp	Pro
1				5					10					15	
Arg Ser Glu Glu															
20															

(2) INFORMATION FOR SEQ ID NO: 37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1313

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

Ala	Gly	Asp	Leu	Glu	Ser	Ser	Val	Asp	Asp	Pro	Arg	Ser	Glu	Glu	Asp
1				5					10					15	
Lys Arg Phe Glu															
20															

## (2) INFORMATION FOR SEQ ID NO: 38:

## (i) SEQUENCE CHARACTERISTICS:

- (A) ~~LENGTH: 20 amino acids~~
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1314

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

Val	Asp	Asp	Pro	Arg	Ser	Glu	Glu	Asp	Lys	Arg	Phe	Glu	Ser	His	Ile
1				5					10					15	
Glu Cys Arg Lys															
20															

## (2) INFORMATION FOR SEQ ID NO: 39:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1315

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

Ser	His	Ile	Glu	Cys	Arg	Lys	Pro	Tyr	Lys	Glu	Leu	Arg	Leu	Glu	Val
1				5					10					15	

Gly Lys Gln Arg  
20

(2) INFORMATION FOR SEQ ID NO: 40:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1316

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

Pro	Tyr	Lys	Glu	Leu	Arg	Leu	Glu	Val	Gly	Lys	Gln	Arg	Leu	Lys	Tyr
1				5					10					15	

Ala Gln Glu Glu  
20

(2) INFORMATION FOR SEQ ID NO: 41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION: 1..20
  - (D) OTHER INFORMATION: /label= YK-1317

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

Gln Arg Leu Lys Tyr Ala Gln Glu Glu Leu Ser Asn Glu Val Leu Pro  
 1 5 10 15  
 Pro Pro Arg Lys  
 20

## (2) INFORMATION FOR SEQ ID NO: 42:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE-TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1318

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

Val Leu Pro Pro Arg Lys Met Lys Gly Leu Phe Ser Gln Ala Lys  
 1 5 10 15  
 Ile Ser Leu Phe  
 20

## (2) INFORMATION FOR SEQ ID NO: 43:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1319

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

Phe Ser Gln Ala Lys Ile Ser Leu Phe Tyr Thr Glu Glu His Glu Ile  
 1                      5                      10                      15

Met Lys Phe Ser  
 20

## (2) INFORMATION FOR SEQ ID NO: 44:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1327

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

Lys Val Asn Phe Pro His Gly Met Leu Asp Leu Glu Glu Ile Ala Ala  
 1                      5                      10                      15

Asn Ser Lys Asp  
 20

## (2) INFORMATION FOR SEQ ID NO: 45:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:



(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1328

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

Asp Leu Glu Glu Ile Ala Ala Asn Ser Lys Asp Phe Pro Asn Met Ser  
 1 5 10 15  
 Glu Thr Asp Leu  
 20

(2) INFORMATION FOR SEQ ID NO: 46:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1331

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

Lys Ile Asn Leu Ala Asp Arg Met Leu Gly Leu Ser Gly Val Gln Glu  
 1 5 10 15  
 Ile Lys Glu Gln  
 20

(2) INFORMATION FOR SEQ ID NO: 47:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..25
- (D) OTHER INFORMATION:/label= YK-1665

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

Gln	Arg	Leu	Lys	Tyr	Ala	Gln	Glu	Glu	Leu	Ser	Asn	Glu	Val	Leu	Pro
1				5					10					15	
-----															
Pro	Pro	Arg	Lys	Met	Lys	Gly	Leu	Phe							
				20				25							

## (2) INFORMATION FOR SEQ ID NO: 48:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..25
- (D) OTHER INFORMATION:/label= YK-1757

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

Trp	Leu	Asn	Pro	Lys	Lys	Ile	Asn	Leu	Ala	Asp	Arg	Met	Leu	Gly	Leu
1				5					10					15	
-----															
Ser	Gly	Val	Gln	Glu	Ile	Lys	Glu	Gln							
			20					25							

## (2) INFORMATION FOR SEQ ID NO: 49:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

~~(v) FRAGMENT TYPE: internal~~

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1334

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

Val Ile Gln Gln Leu Asn Gln Asp Glu His Ser His Ile Ile Gly Leu  
1 5 10 15

Leu Arg Val Met  
20

(2) INFORMATION FOR SEQ ID NO: 50:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1341

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

Asn Ile Leu Lys Asp Asn Gln Gln Lys Ile Glu Lys Ala Ile Glu Glu  
1 5 10 15

Ala Asp Glu Phe  
20

(2) INFORMATION FOR SEQ ID NO: 51:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1347

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

Leu	Gly	Ser	Ile	Asn	Gln	Ala	Met	Val	Thr	Arg	Cys	Glu	Pro	Val	Val
1				5					10					15	

Cys	Tyr	Leu	Tyr
		20	

(2) INFORMATION FOR SEQ ID NO: 52:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1348

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

Arg	Cys	Glu	Pro	Val	Val	Cys	Tyr	Leu	Tyr	Gly	Lys	Arg	Gly	Gly	Gly
1				5					10					15	

Lys	Ser	Leu	Thr
		20	

(2) INFORMATION FOR SEQ ID NO: 53:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1352

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

Thr	Lys	Pro	Val	Ala	Ser	Asp	Tyr	Trp	Asp	Gly	Tyr	Ser	Gly	Gln	Leu
1				5					10					15	
Val Cys Ile Ile															
20															

(2) INFORMATION FOR SEQ ID NO: 54:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION: 1..20

(D) OTHER INFORMATION: /label= YK-1356

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

Val	Ser	Gly	Cys	Pro	Met	Arg	Leu	Asn	Met	Ala	Ser	Leu	Glu	Glu	Lys
1				5					10					15	
Gly Arg His Phe															
20															

(2) INFORMATION FOR SEQ ID NO: 55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:-

- (A) NAME/KEY: Peptide  
(B) LOCATION:1..20  
(D) OTHER INFORMATION:/label= YK-1357

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

Leu Asn Met Ala Ser Leu Glu Glu Lys Gly Arg His Phe Ser Ser Pro  
1 5 10 15

Phe Ile Ile Ala  
20

(2) INFORMATION FOR SEQ ID NO: 56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide  
(B) LOCATION:1..20  
(D) OTHER INFORMATION:/label= YK-1360

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

Asn Pro Ser Pro Lys Thr Val Tyr Val Lys Glu Ala Ile Asp Arg Arg  
1 5 10 15

Leu His Phe Lys

20

## (2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1361
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:
 

Val	Lys	Glu	Ala	Ile	Asp	Arg	Arg	Leu	His	Phe	Lys	Val	Glu	Val	Lys
1				5				10					15		
Pro Ala Ser Phe															
20															

## (2) INFORMATION FOR SEQ ID NO: 58:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1362
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:
 

Val	Lys	Pro	Ala	Ser	Phe	Phe	Lys	Asn	Pro	His	Asn	Asp	Met	Leu	Asn
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

1                      5                      10                      15  
 Val Asn Leu Ala  
 20

## (2) INFORMATION FOR SEQ ID NO: 59:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1363
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:
 

Lys Asn Pro His Asn Asp Met Leu Asn Val Asn Leu Ala Lys Thr Asn  
 1                      5                      10                      15

Asp Ala Ile Lys  
 20

## (2) INFORMATION FOR SEQ ID NO: 60:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1364



(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

Leu Ala Lys Thr Asn Asp Ala Ile Lys Asp Met Ser Cys Val Asp Leu  
 1 5 10 15

Ile Met Asp Gly  
 20

(2) INFORMATION FOR SEQ ID NO: 61:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1367

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

Val Met Thr Val Glu Ile Arg Lys Gln Asn Met Thr Glu Phe Met Glu  
 1 5 10 15

Leu Trp Ser Gln  
 20

(2) INFORMATION FOR SEQ ID NO: 62:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1368

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

```

Ser Gln Gly Ile Ser Asp Asp Asp Asn Asp Ser Ala Val Ala Glu Phe
1           5           10           15
Phe Gln Ser Phe
                20

```

(2) INFORMATION FOR SEQ ID NO: 63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1369

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

```

Asp Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro
1           5           10           15
Ser Asn Ser Lys
                20

```

(2) INFORMATION FOR SEQ ID NO: 64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1370

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser Asn Ser Lys Leu Ser Gly  
 1                      5                      10                      15

Phe Phe Gln Ser  
                     20

## (2) INFORMATION FOR SEQ ID NO: 65:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..25
- (D) OTHER INFORMATION:/label= YK-1832

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser  
 1                      5                      10                      15

Asn Ser Lys Leu Ser Gly Phe Phe Gln  
                     20                      25

## (2) INFORMATION FOR SEQ ID NO: 66:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1374

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

His	Gly	Val	Thr	Lys	Pro	Lys	Gln	Val	Ile	Lys	Leu	Asp	Ala	Asp	Pro
1				5				10					15		

---

Val	Glu	Ser	Gln
			20

(2) INFORMATION FOR SEQ ID NO: 67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1376

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

Gly	Leu	Val	Arg	Lys	Asn	Leu	Val	Gln	Phe	Gly	Val	Gly	Glu	Lys	Asn
1				5				10					15		

Gly	Cys	Val	Arg
			20

(2) INFORMATION FOR SEQ ID NO: 68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1382

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

Asp	Val	Val	Leu	Met	Lys	Val	Pro	Thr	Ile	Pro	Lys	Phe	Arg	Asp	Ile
1				5					10					15	

Thr	Gln	His	Phe
			20

(2) INFORMATION FOR SEQ ID NO: 69:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1388

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

Met	Glu	Glu	Lys	Ala	Thr	Tyr	Val	His	Lys	Lys	Asn	Asp	Gly	Thr	Thr
1				5					10					15	

Val	Asp	Leu	Thr
			20

(2) INFORMATION FOR SEQ ID NO: 70:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1389

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

Lys	Asn	Asp	Gly	Thr	Thr	Val	Asp	Leu	Thr	Val	Asp	Gln	Ala	Trp	Arg
1				5					10					15	
Gly Lys Gly Glu															
20															

(2) INFORMATION FOR SEQ ID NO: 71:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1390

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

Arg	Gly	Lys	Gly	Glu	Gly	Leu	Pro	Gly	Met	Cys	Gly	Gly	Ala	Leu	Val
1				5					10					15	
Ser Ser Asn Gln															
20															

(2) INFORMATION FOR SEQ ID NO: 72:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1393

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

Val	Ala	Lys	Leu	Val	Thr	Gln	Glu	Met	Phe	Gln	Asn	Ile	Asp	Lys	Lys
1				5					10					15	
Ile Glu Ser Gln															
20															

(2) INFORMATION FOR SEQ ID NO: 73:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide  
 (B) LOCATION:1..20  
 (D) OTHER INFORMATION:/label= YK-1394

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

Arg	Ile	Met	Lys	Val	Glu	Phe	Thr	Gln	Cys	Ser	Met	Asn	Val	Val	Ser
1				5					10					15	
Lys Thr Leu Phe															
20															

## (2) INFORMATION FOR SEQ ID NO: 74:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1395

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

Phe	Thr	Gln	Cys	Ser	Met	Asn	Val	Val	Ser	Lys	Thr	Leu	Phe	Arg	Lys
1				5					10					15	
Ser Pro Ile Tyr															
20															

## (2) INFORMATION FOR SEQ ID NO: 75:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1399

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

Met	Leu	Ser	Lys	Tyr	Ser	Leu	Pro	Ile	Val	Glu	Glu	Pro	Glu	Asp	Tyr
1				5					10					15	



Lys Glu Ala Ser  
20

(2) INFORMATION FOR SEQ ID NO: 76:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1407
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:
 

Leu	Asp	Glu	Asn	Gly	Leu	Leu	Leu	Gly	Val	His	Pro	Arg	Leu	Ala	Gln
1				5				10					15		

Arg	Ile	Leu	Phe
			20

(2) INFORMATION FOR SEQ ID NO: 77:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 20 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (v) FRAGMENT TYPE: internal
- (ix) FEATURE:
  - (A) NAME/KEY: Peptide
  - (B) LOCATION:1..20
  - (D) OTHER INFORMATION:/label= YK-1411
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

Cys Pro Lys Asp Glu Leu Arg Pro Leu Glu Lys Val Leu Glu Ser Lys  
 1 5 10 15

Thr Arg Ala Ile  
 20

(2) INFORMATION FOR SEQ ID NO: 78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1412

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

Ser Lys Thr Arg Ala Ile Asp Ala Cys Pro Leu Asp Tyr Ser Ile Leu  
 1 5 10 15

Cys Arg Met Tyr  
 20

(2) INFORMATION FOR SEQ ID NO: 79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION:1..20
- (D) OTHER INFORMATION:/label= YK-1414

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

Arg Met Tyr Trp Gly Pro Ala Ile Ser Tyr Phe His Leu Asn Pro Gly  
 1                      5                      10                      15  
 Phe His Thr Gly  
                     20

## (2) INFORMATION FOR SEQ ID NO: 80:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1418

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

Lys Thr Met Ile Arg Phe Gly Asp Val Gly Leu Asp Leu Asp Phe Ser  
 1                      5                      10                      15  
 Ala Phe Asp Ala  
                     20

## (2) INFORMATION FOR SEQ ID NO: 81:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

Asp Leu Asp Phe Ser Ala Phe Asp Ala Ser Leu Ser Pro Phe Met Ile  
1 5 10 15  
Arg Glu Ala Gly  
20

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 20 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(v) FRAGMENT TYPE: internal

(A) NAME/KEY: Peptide  
(B) LOCATION:1..20  
(D) OTHER INFORMATION:/label= YK-1424

Ile Asn Asn Val Asn Leu Tyr Tyr Val Phe Ser Lys Ile Phe Gly Lys  
1 5 10 15  
Ser Pro Val Phe  
20

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1428

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

Gly Gln Lys Ile Val Asp Glu Phe Lys Lys Leu Gly Met Thr Ala Thr  
 1                      5                      10                      15

Ser Ala Asp Lys  
                     20

## (2) INFORMATION FOR SEQ ID NO: 84:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

## (ix) FEATURE:

- (A) NAME/KEY: Peptide
- (B) LOCATION: 1..20
- (D) OTHER INFORMATION: /label= YK-1429

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

Leu Gly Met Thr Ala Thr Ser Ala Asp Lys Asn Val Pro Gln Leu Lys  
 1                      5                      10                      15

Pro Val Ser Glu  
                     20

## (2) INFORMATION FOR SEQ ID NO: 85:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) ~~FRAGMENT TYPE: internal~~

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

Pro Gln Leu Lys Pro Val Ser Glu Leu Thr Phe Leu Lys Arg Ser Phe  
1 -----5-----10-----15-----

Asn Leu Val Glu  
20

(2) INFORMATION FOR SEQ ID NO: 86:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1434

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

Ser Glu Lys Thr Ile Trp Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala  
1 -----5-----10-----15-----

Glu Phe Glu Gln  
20

(2) INFORMATION FOR SEQ ID NO: 87:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1435

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu  
1 5 10 15

Glu Asn Ala Gln  
20

(2) INFORMATION FOR SEQ ID NO: 88:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Peptide

(B) LOCATION:1..20

(D) OTHER INFORMATION:/label= YK-1436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu Glu Asn Ala Gln  
1 5 10 15

Trp Phe Ala Phe  
20